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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,876	01/05/2000	CHRISTOPHER M. HERRING	P04658	9857

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EXAMINER	
HYUN, SOON D	

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/477,876	HERRING ET AL.	
	Examiner	Art Unit	
	Soon D Hyun	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,25,29 and 36-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,25,29 and 36-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 25, 29, and 36-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (U.S. Patent No. 6,393,007) in view of Persson et al (U.S. patent No. 5,537,434).

Regarding claims 1, 3, 48, 49, and 52, Haartsen discloses a system for concurrent wireless voice and data communications comprising: a first transceiving unit (a radio access unit 2 in FIG. 1) tether to a voice network (PSTN) and to a data network (ISDN); and

a second, mobile transceiving unit (6 or 7);

the first transceiving unit operable to wirelessly transmit voice information from the voice network over a first dedicated set of time slots (slot A) of a plurality of time frames (hop k and hop k+1 in FIG. 4) and data information (d) from the data network over a second dedicated set of time slots (slots 8-11) of the plurality of time frames.

The second, mobile transceiving unit to receive and separate the voice information and the data information from the first transceiving unit

However, Haartsen differs from the present application in that the frequency hopping is cyclic, while the present application is in a pseudo random manner. Persson et al teaches a pseudo random manner for the frequency hopping (col. 9, lines 5-20). Those of skill in the art would have been motivated by Persson et al to change a carrier frequency in a pseudo random manner to increase security of transmission, Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the pseudo random manner of Persson et al into Haartsen to increase security of transmission.

Regarding claims 2, and 4-6, Haartsen does not teach that the data network is a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network as recited in the claims. It will be apparent to those skilled in the art that V.90 modem, a cable modem or an Ethernet could be used for the data network of Haartsen, because no unexpected results can be seen from the use of such data networks. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network for the data network.

Regarding claims 25 and 29, Haartsen does not explicitly teach that a time slot containing data information comprises a forward error correction code. It would have been obvious to one having ordinary skill in the art to add a forward error correction code to data information for a receiver to correct an error, if any, when the data is received.

Regarding claim 36, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 37and 38, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 39, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Regarding claims 40 and 41, it will be apparent to those skilled in the art that the number of predefined set of time slots for downstream and upstream could be different when the traffic volume is different. Therefore, it would have been obvious to one having ordinary skill in the art to allocate different number of time slots for downstream and upstream.

Regarding claim 42, Haartsen discloses a method comprising:

transmitting voice information from a transceiving unit (a radio access unit 2 in FIG. 1) over a first dedicated set of time slots (slots 1 and 6 in FIG. 4) associated with a

first plurality of time frames (hop k frame and hop k+1 frame in FIG 4 of a wireless channel 9 in FIG 1);

transmitting data information from the transceiving unit over a second set of time slots (slot 8 in FIG. 4) associated with the first plurality of time frames of the wireless channel

However, Haartsen differs from the present application in that the frequency hopping is cyclic, while the present application is in a pseudo random manner. Persson et al teaches a pseudo random manner for the frequency hopping (col. 9, lines 5-20). Those of skill in the art would have been motivated by Persson et al to change a carrier frequency in a pseudo random manner to increase security of transmission, Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the pseudo random manner of Persson et al into Haartsen to increase security of transmission.

Regarding claim 43, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 44 and 45, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 46, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Regarding claim 47, it would have been obvious to one having ordinary skill in the art to incorporate a less or higher hopping rate as long as no unexpected results can be seen from the use of the hopping rate.

Regarding claim 50, Haartsen further discloses that the frequency band for the system is the ISM band (approx. 2401-2480 MHz).

Regarding claim 51, Haartsen teaches 79 carrier frequencies, but it would have been obvious to one having ordinary skill in the art to incorporate less or more carriers (i.e., 75 carriers) in the frequency band as long as no unexpected results can be seen from the use of the 75 carriers.

Response to Arguments

3. Applicant's arguments filed 08/30/2004 have been fully considered but they are not persuasive.

Applicant argues that Haartesen fails to teach the transmission of voice information and data information over a dedicated set of time slots as recited in claims 1, 42, 48 and 52. Examiner disagrees. With reference to the FIG. 4 as discussed above, voice information is transmitted over slot A(s) which are dedicated for voice information

and data information is transmitted over slots d(s) witch are dedicated for data information.

Applicant further argues that Haartsen provides no mention of desire for transmission security with pseudo random carrier frequency as recited in the claims, thus, the Office action fails to establish that one of ordinary skill in the art would be motivated to combine Haartsen and Persson.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is found in the knowledge generally available to one of ordinary skill in the art as discussed above.

For the reason as discussed above, Examiner believes that the claim rejection is proper.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon D Hyun whose telephone number is 571-272-3121. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hyun
01/21/2004

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